

IWAKUNI MCAS JA

Latitude = 34.15 N

WMO No. 477640

Longitude = 132.23 E

Elevation = 16 Feet

Period of Record = 1973 TO 2005

Average Pressure = 29.93 inches Hg

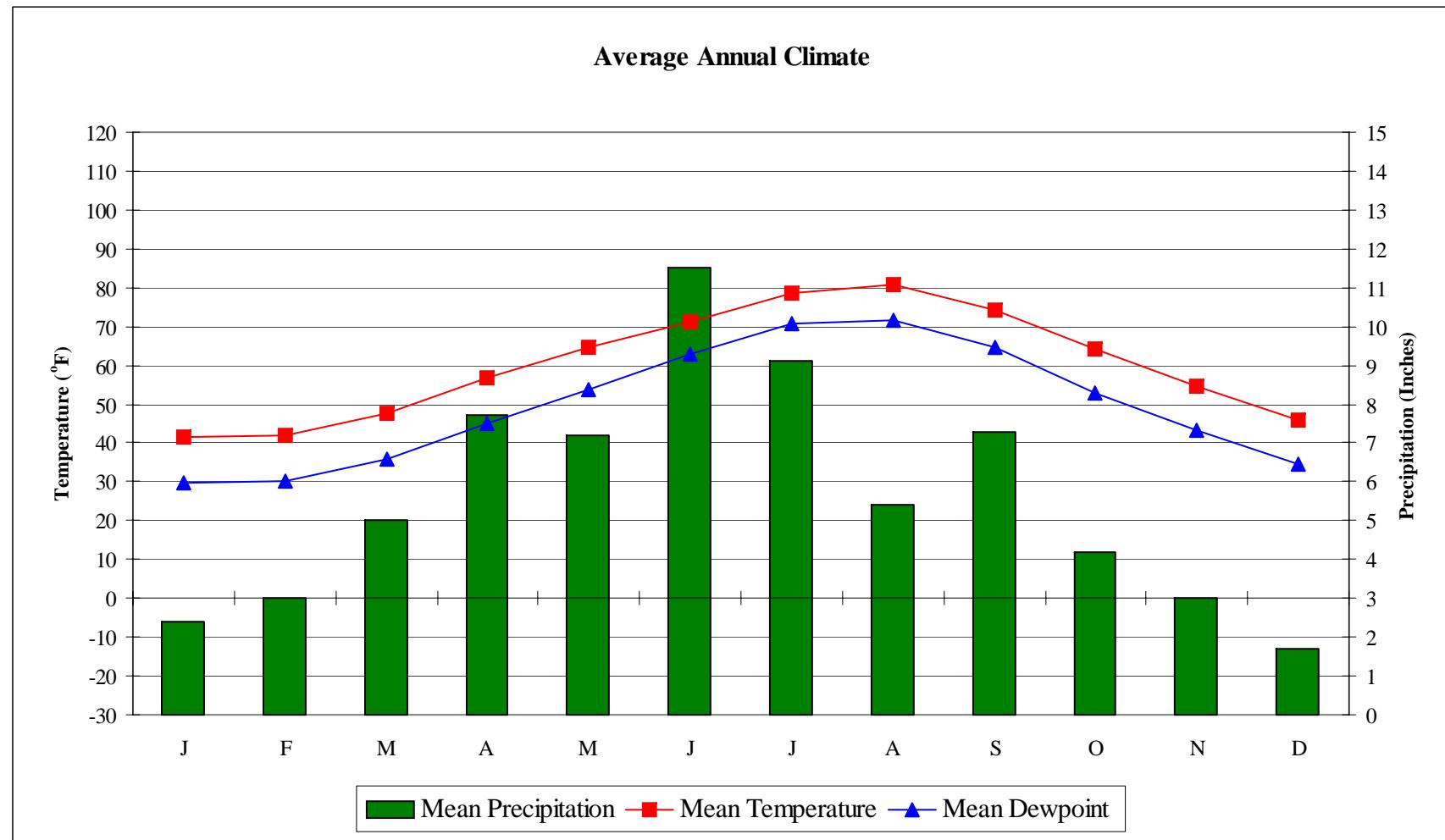
Design Criteria Data

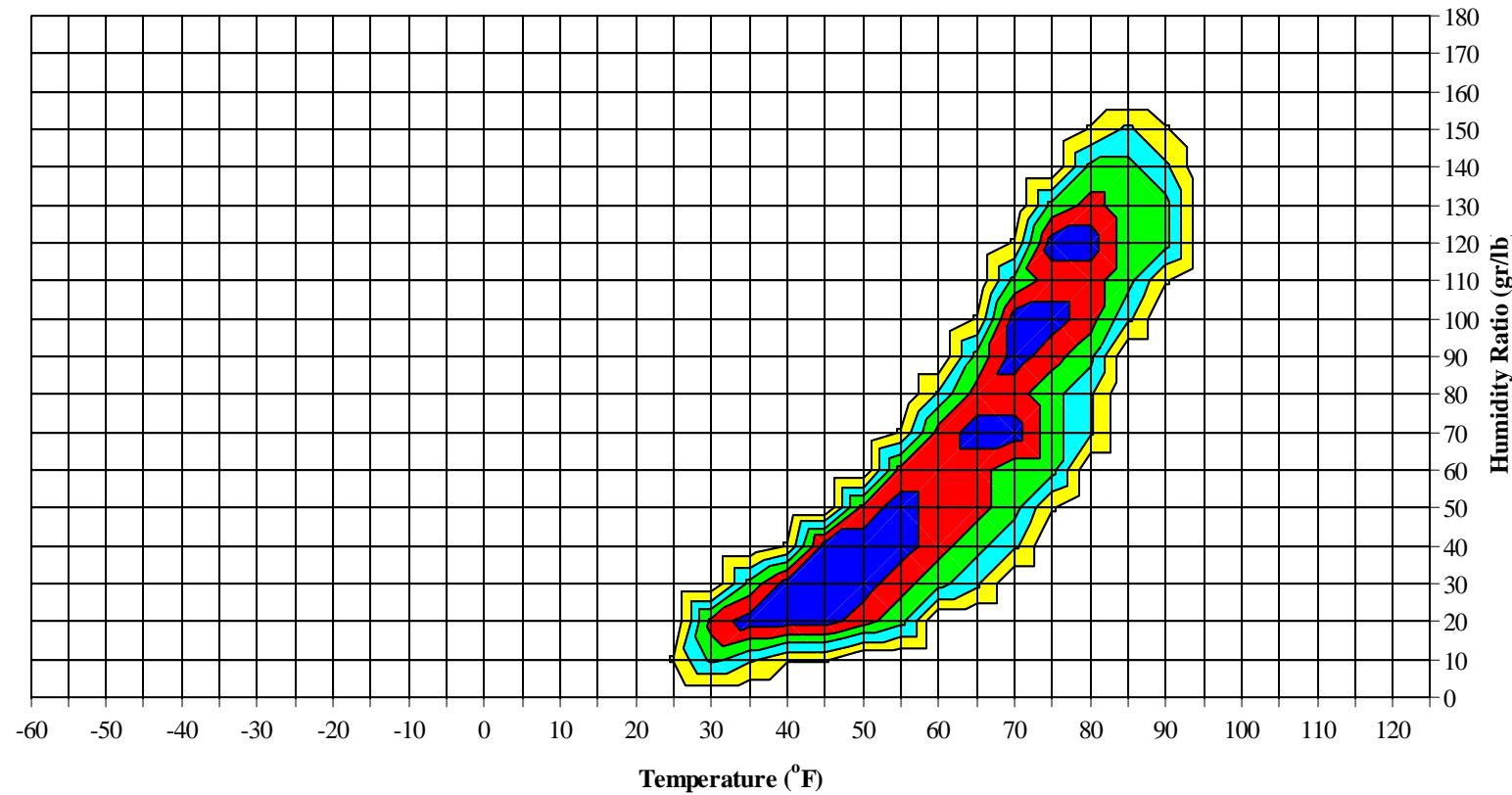
	Design Value	Mean Coincident (Average) Values			
		Wet Bulb Temperature (°F)	Humidity Ratio (°F)	Wind Speed (gr/lb)	Prevailing Direction (mph) (NSEW)
Dry Bulb Temperature (T)	(°F)				
Median of Extreme Highs	93	79	127	7.4	WSW
0.4% Occurrence	90	78	127	7.1	S
1.0% Occurrence	88	78	127	6.6	S
2.0% Occurrence	86	77	125	6.0	S
Mean Daily Range	13	-	-	-	-
97.5% Occurrence	34	31	20	5.0	NW
99.0% Occurrence	32	29	19	4.6	NW
99.6% Occurrence	30	28	17	4.9	WNW
Median of Extreme Lows	25	23	13	5.3	W
Wet Bulb Temperature (T_{wb})	(°F)	Mean Coincident (Average) Values			
Median of Extreme Highs	82	88	151	6.8	S
0.4% Occurrence	80	87	141	6.3	S
1.0% Occurrence	79	85	137	6.0	S
2.0% Occurrence	78	84	132	5.8	S
Humidity Ratio (HR)	(gr/lb)	Mean Coincident (Average) Values			
Median of Extreme Highs	160	86	1.05	6.3	S
0.4% Occurrence	149	85	0.99	7.1	S
1.0% Occurrence	141	84	0.94	5.4	S
2.0% Occurrence	133	82	0.88	5.7	S
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		7	917	1229	2246

Other Site Data

Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
8	N/A	N/A	4.1 + 0.9
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
62.7	N/A	N/A	13

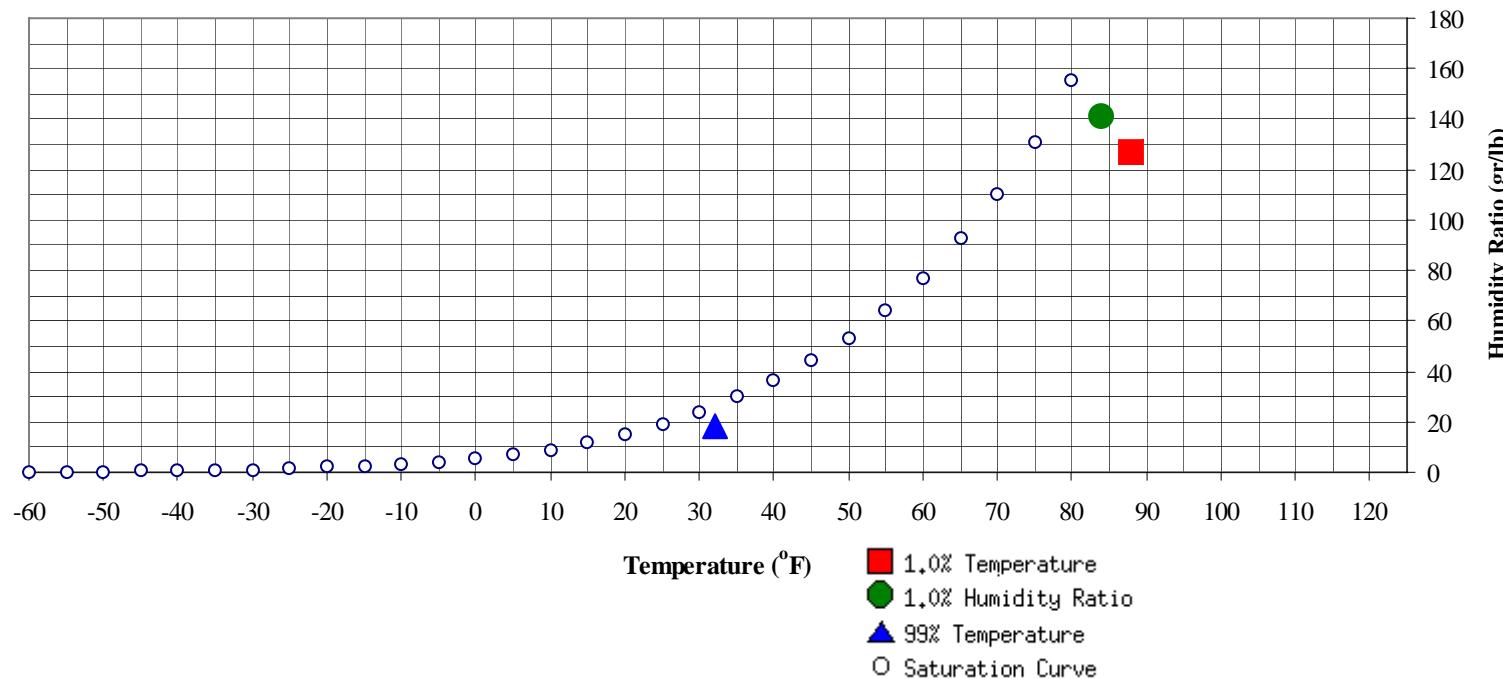
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.



Long Term Psychrometric Summary

- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

Psychrometric Summary of Peak Design Values



	MCHR (°F)	Enthalpy (btu/lb)	1.0% Humidity Ratio	MCDB (°F)	MCWB (°F)	MC Dewpt (°F)	Enthalpy (btu/lb)
99% Dry Bulb	32	18.4	141.4	83.8	78.8	77	42.3

	MCHR (°F)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	88	77.7	41.1

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Dry-Bulb Temperature Hours For An Average Year (Sheet 1 of 5)

Period of Record = 1973 TO 2005

Temperature Range (°F)	January						February						March					
	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)			
	01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00					
	To 08	To 16	To 00			To 08	To 16	To 00			To 08	To 16	To 00					
100 / 104																		
95 / 99																		
90 / 94																		
85 / 89																		
80 / 84																		
75 / 79																		
70 / 74																		
65 / 69	0		0	61.0			0		0	0	57.8		0	2	0	2	56.2	
60 / 64	1	0	1	52.5			0	2	1	3	54.3		2	16	7	25	53.8	
55 / 59	0	12	2	14	48.9		1	13	5	19	49.6		8	49	30	87	49.9	
50 / 54	6	45	18	69	45.1		9	47	25	81	45.2		33	93	71	197	45.8	
45 / 49	30	95	63	188	40.9		27	84	63	174	40.7		67	64	81	212	41.7	
40 / 44	41	49	59	149	37.2		37	42	50	129	37.2		52	16	35	103	37.8	
35 / 39	90	38	74	202	33.4		79	27	54	160	33.4		64	7	19	90	34.1	
30 / 34	71	8	29	108	29.4		60	7	22	89	29.3		21	1	4	26	29.9	
25 / 29	10	1	3	14	25.3		9	1	3	13	25.0		1	0	0	1	25.1	
20 / 24	0		0	21.0			1	0	1	2	20.8		0	0		0	23.0	
15 / 19							0		0	0	18.3							

Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary and the ventilation and infiltration load pages in this manual.

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Dry-Bulb Temperature Hours For An Average Year (Sheet 2 of 5)

Period of Record = 1973 TO 2005

Temperature Range (°F)	April						May						June					
	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)			
	01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00					
	To 08	To 16	To 00			To 08	To 16	To 00			To 08	To 16	To 00					
100 / 104																		
95 / 99																0	0	0 76.0
90 / 94																0	2	1 3 74.5
85 / 89																1	22	10 33 72.3
80 / 84	0	0	0	63.6		0	2	1	3	67.3					15	90	54	159 69.3
75 / 79	1	0	1	63.5		0	23	10	33	65.2					80	98	110	288 66.8
70 / 74	1	14	6	21 60.9		10	82	50	142	63.0					81	23	50	154 63.6
65 / 69	4	35	19	58 58.5		32	70	68	170	60.6					55	5	14	74 59.5
60 / 64	23	81	62	166 55.5		94	58	83	235	57.7					8	0	8	54.0
55 / 59	65	69	83	217 51.7		77	12	31	120	52.9					0		0	50.1
50 / 54	72	32	48	152 47.2		29	1	5	35	48.3								
45 / 49	48	7	18	73 42.3		6		0	6	43.6								
40 / 44	17	1	4	22 38.4		0			0	38.0								
35 / 39	10	0	1	11 34.5														
30 / 34	0			0 30.5														
25 / 29																		
20 / 24																		
15 / 19																		

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Dry-Bulb Temperature Hours For An Average Year (Sheet 3 of 5)

Period of Record = 1973 TO 2005

Temperature Range (°F)	July						August						September					
	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)			
	01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00					
	To 08	To 16	To 00			To 08	To 16	To 00			To 08	To 16	To 00					
100 / 104									83.0									
95 / 99	0	0	0	79.2		1	0	1	79.1					0	0	80.0		
90 / 94	17	6	23	78.5		0	26	7	33	78.5				3	0	3	77.4	
85 / 89	1	50	23	74	77.5	2	77	31	110	77.2		0	17	4	21	76.3		
80 / 84	34	94	88	216	75.3	56	111	124	292	75.4		8	74	35	117	73.5		
75 / 79	122	62	91	275	72.7	146	28	76	250	72.9		53	89	80	223	70.1		
70 / 74	74	22	37	133	69.1	41	4	10	55	69.1		84	45	81	210	66.4		
65 / 69	16	2	3	21	65.0	3	0	0	3	63.6		53	10	28	92	62.7		
60 / 64	1		0	1	61.3	0			0	59.9		34	2	10	46	58.6		
55 / 59												7		1	8	53.9		
50 / 54												0			0	48.9		
45 / 49																		
40 / 44																		
35 / 39																		
30 / 34																		
25 / 29																		
20 / 24																		
15 / 19																		

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WMO No. 477640

Dry-Bulb Temperature Hours For An Average Year (Sheet 4 of 5)

Period of Record = 1973 TO 2005

Temperature Range (°F)	October						November						December					
	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)			
	01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00					
	To 08	To 16	To 00			To 08	To 16	To 00			To 08	To 16	To 00					
100 / 104																		
95 / 99																		
90 / 94																		
85 / 89	0		0	74.5														
80 / 84	4	0	4	69.7			0		0	69.0								
75 / 79	2	36	9	47	66.6		0	0	0	66.7								
70 / 74	14	95	44	153	63.0		0	12	2	14	61.9							
65 / 69	29	56	57	143	60.3		3	29	9	41	59.1			1		1	57.3	
60 / 64	78	44	83	206	56.8		17	74	43	134	55.5			1	11	1	13	53.4
55 / 59	75	11	39	126	52.4		47	69	64	181	51.1			4	48	16	68	49.7
50 / 54	36	1	13	50	47.8		60	39	65	165	46.6			21	81	49	150	45.6
45 / 49	12	0	2	14	43.5		67	14	41	122	42.3			55	68	85	207	41.5
40 / 44	1		0	1	39.5		32	2	12	46	38.4			59	25	49	132	38.0
35 / 39	0			0	36.8		14	0	4	18	34.9			85	13	39	136	34.1
30 / 34							0	0		0	32.3			22	2	9	33	29.9
25 / 29														2	0	1	3	26.3
20 / 24																		
15 / 19																		

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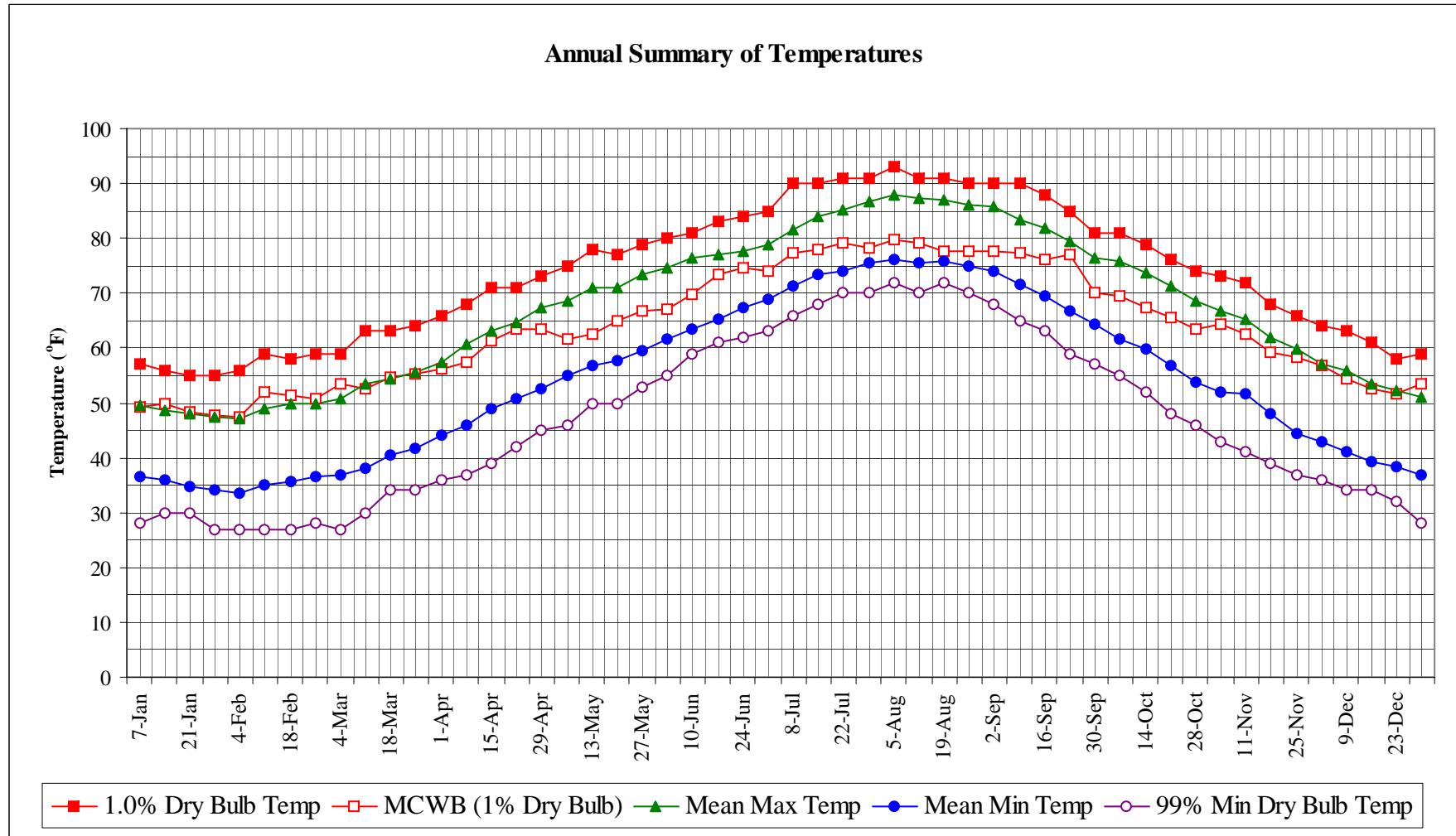
WMO No. 477640

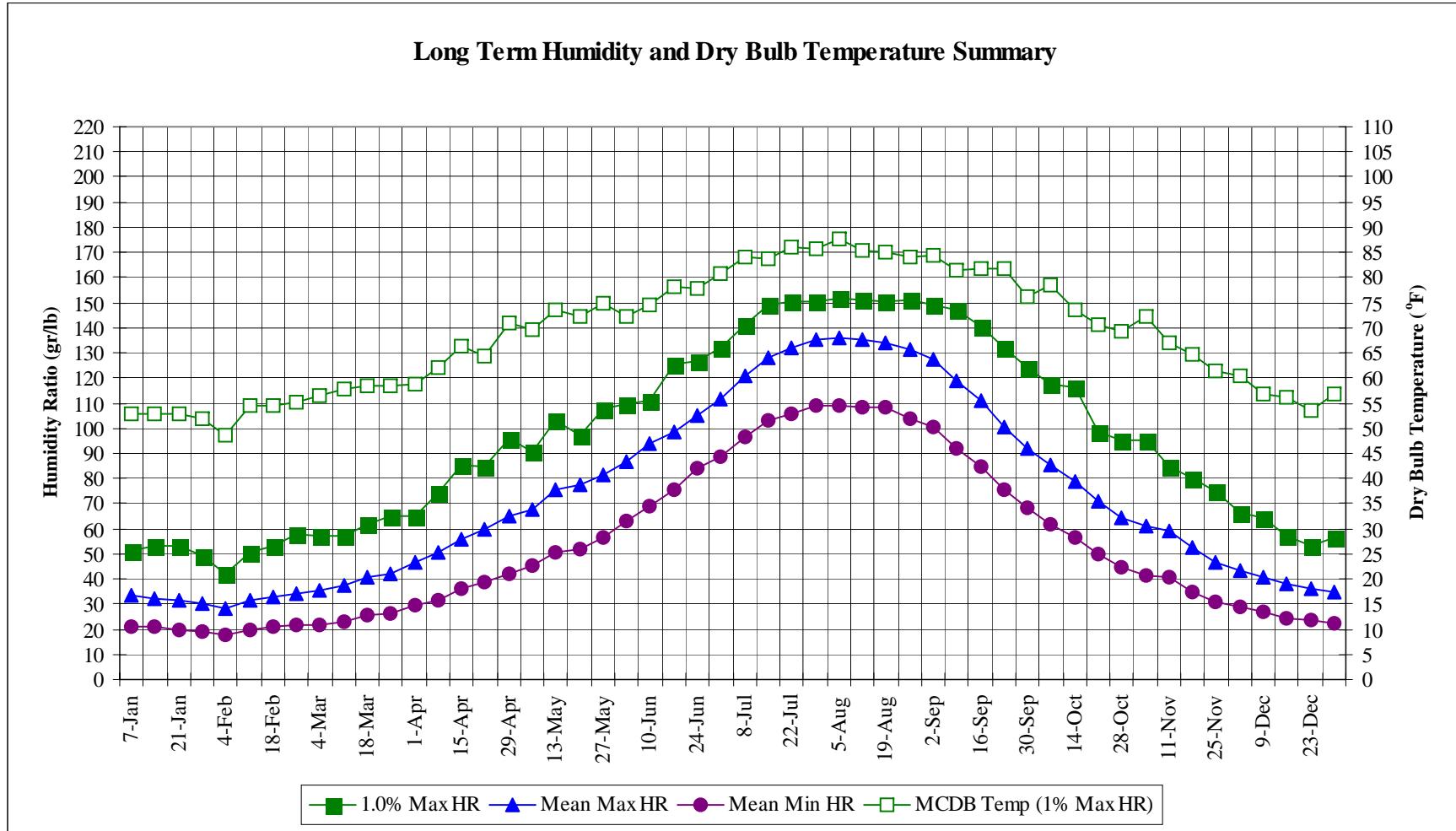
Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)

Period of Record = 1973 TO 2005

Temperature Range (°F)	Annual Totals					
	Hour Group (LST)			Total Obs	M C W B (°F)	
	01 To 08	09 To 16	17 To 00			
100 / 104						
95 / 99		1	0	1	79.1	
90 / 94	0	47	14	61	78.4	
85 / 89	3	146	58	207	77.2	
80 / 84	99	307	257	663	74.8	
75 / 79	337	330	320	987	71.1	
70 / 74	302	373	341	1016	65.8	
65 / 69	222	229	234	685	61.4	
60 / 64	306	294	306	906	56.8	
55 / 59	293	283	272	848	51.4	
50 / 54	266	338	295	899	46.2	
45 / 49	311	333	353	997	41.5	
40 / 44	238	135	208	581	37.6	
35 / 39	344	85	190	619	33.7	
30 / 34	175	17	64	256	29.5	
25 / 29	22	2	6	30	25.2	
20 / 24	1	0	1	2	20.9	
15 / 19	0		0	0	18.3	

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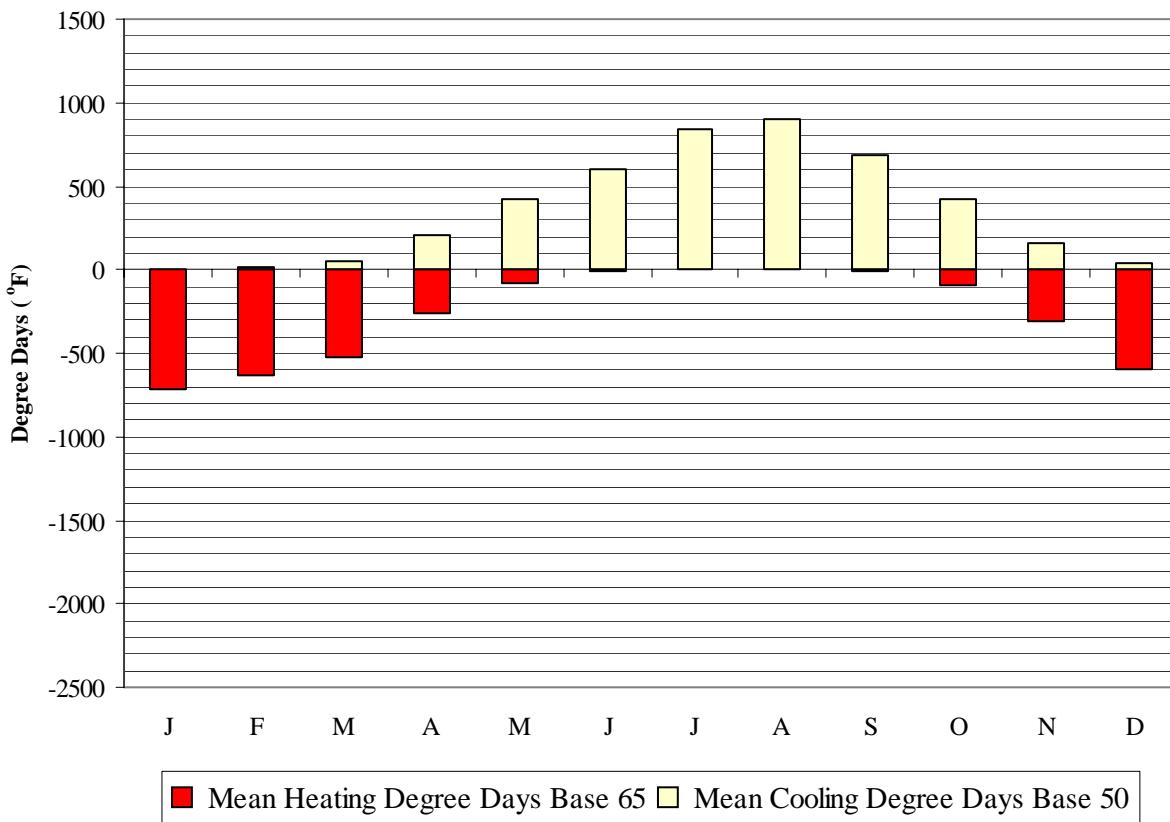
IWAKUNI MCAS JA

WMO No. 477640

Long Term Dry Bulb Temperature and Humidity Summary

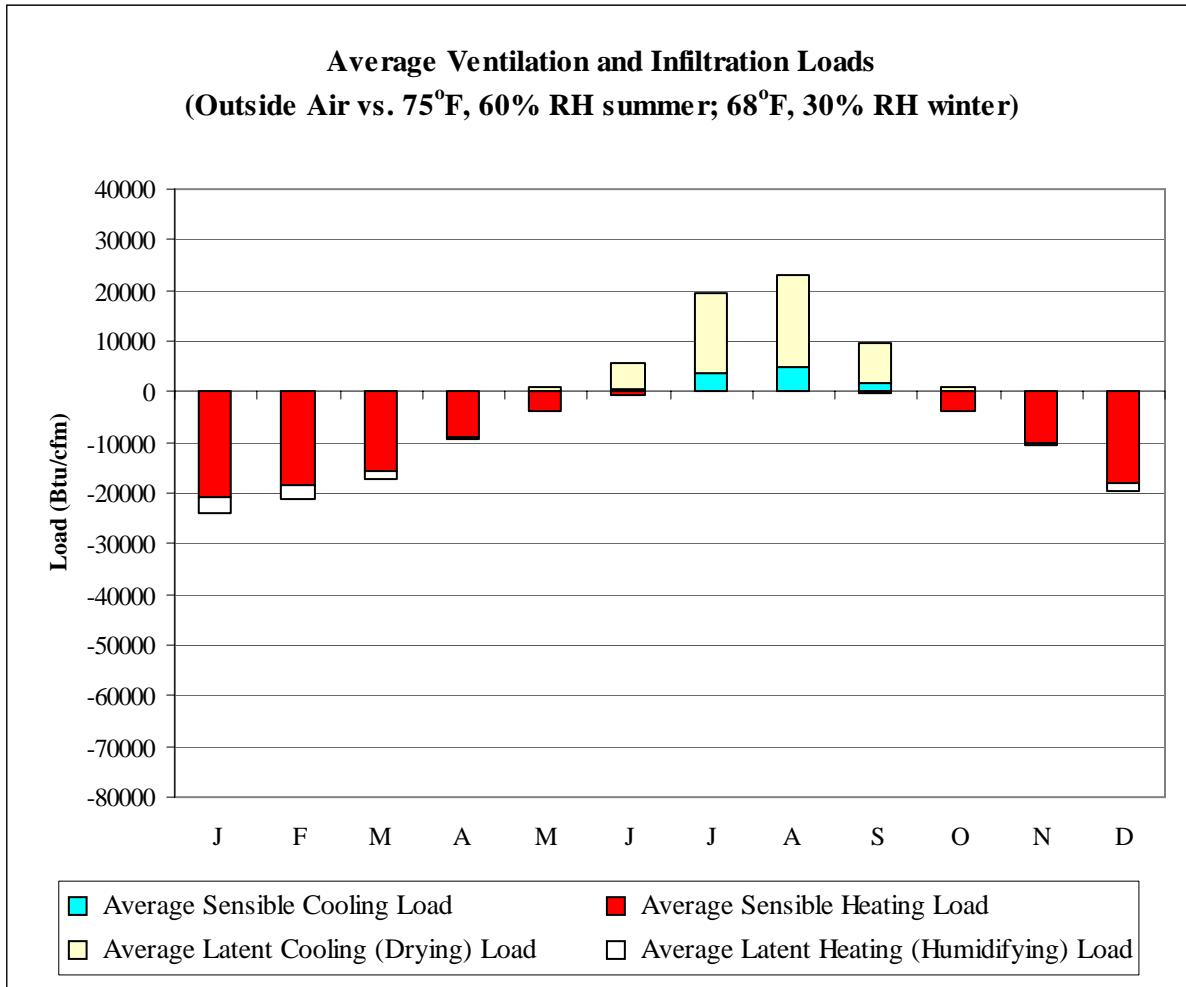
Week Ending	1.0% Temp (°F)	MCWB @ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB @ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	57.0	49.2	49.5	36.5	28.0	51.1	52.9	33.7	21.3
14-Jan	56.0	50.0	48.8	35.8	30.0	53.2	52.9	32.2	21.0
21-Jan	55.0	48.2	48.1	34.8	30.0	53.2	53.0	31.3	19.9
28-Jan	55.0	47.7	47.6	34.1	27.0	49.0	52.0	30.1	19.3
4-Feb	56.0	47.6	47.1	33.5	27.0	42.0	48.7	28.3	17.9
11-Feb	59.0	52.1	49.1	34.9	27.0	50.4	54.5	31.8	19.9
18-Feb	58.0	51.5	49.8	35.5	27.0	53.2	54.5	33.0	20.7
25-Feb	59.0	50.7	49.8	36.5	28.0	58.1	55.3	34.1	21.5
4-Mar	59.0	53.6	50.6	36.7	27.0	57.4	56.4	35.4	21.9
11-Mar	63.0	52.5	53.4	38.1	30.0	57.4	57.9	37.6	22.7
18-Mar	63.0	54.8	54.3	40.3	34.0	61.6	58.5	40.7	25.5
25-Mar	64.0	55.3	55.5	41.6	34.0	65.1	58.6	42.1	26.3
1-Apr	66.0	56.2	57.4	44.2	36.0	65.1	58.7	46.4	29.5
8-Apr	68.0	57.5	60.7	46.1	37.0	74.2	62.1	50.6	31.8
15-Apr	71.0	61.4	63.1	49.0	39.0	85.4	66.5	55.8	36.0
22-Apr	71.0	63.4	64.8	50.9	42.0	84.7	64.5	60.1	39.0
29-Apr	73.0	63.4	67.4	52.6	45.0	95.9	71.1	65.3	42.0
6-May	75.0	61.7	68.5	54.9	46.0	90.3	69.6	67.9	45.6
13-May	78.0	62.5	71.0	56.8	50.0	102.9	73.6	75.2	50.3
20-May	77.0	65.0	71.0	57.6	50.0	97.3	72.1	77.5	52.0
27-May	79.0	66.7	73.5	59.5	53.0	107.8	75.0	81.2	56.4
3-Jun	80.0	67.0	74.6	61.7	55.0	109.9	72.3	86.8	63.2
10-Jun	81.0	69.8	76.4	63.5	59.0	111.3	74.6	93.7	69.1
17-Jun	83.0	73.3	77.0	65.4	61.0	125.3	78.1	98.4	75.6
24-Jun	84.0	74.6	77.5	67.4	62.0	126.7	77.9	105.1	84.0
1-Jul	85.0	74.0	78.9	69.0	63.0	132.3	80.6	111.4	88.3
8-Jul	90.0	77.4	81.7	71.3	66.0	141.4	84.0	120.9	96.4
15-Jul	90.0	78.1	84.0	73.5	68.0	149.1	83.8	127.8	103.3
22-Jul	91.0	79.0	85.3	74.1	70.0	150.5	85.9	131.9	105.8
29-Jul	91.0	78.3	86.7	75.6	70.0	150.5	85.6	135.3	109.1
5-Aug	93.0	79.8	88.0	76.0	72.0	151.9	87.6	136.3	109.3
12-Aug	91.0	79.0	87.2	75.6	70.0	151.2	85.3	135.2	108.4
19-Aug	91.0	77.7	86.9	75.9	72.0	150.5	85.1	134.3	108.6
26-Aug	90.0	77.6	86.0	74.9	70.0	151.2	84.2	131.2	104.0
2-Sep	90.0	77.8	85.7	73.9	68.0	149.1	84.5	127.3	100.3
9-Sep	90.0	77.3	83.4	71.6	65.0	147.0	81.3	119.2	92.3
16-Sep	88.0	76.1	81.7	69.4	63.0	140.7	81.8	111.3	84.5
23-Sep	85.0	77.0	79.4	66.7	59.0	132.3	81.7	100.2	75.5
30-Sep	81.0	70.2	76.5	64.2	57.0	123.9	76.1	92.1	68.6
7-Oct	81.0	69.4	75.8	61.7	55.0	117.6	78.5	85.2	61.5
14-Oct	79.0	67.5	73.7	59.8	52.0	116.2	73.7	79.1	56.7
21-Oct	76.0	65.4	71.3	56.8	48.0	98.7	70.7	70.7	49.9
28-Oct	74.0	63.3	68.7	53.7	46.0	95.2	69.3	64.4	44.6
4-Nov	73.0	64.3	66.9	51.9	43.0	95.2	72.2	61.0	41.7
11-Nov	72.0	62.5	65.4	51.5	41.0	84.7	66.9	59.2	40.8
18-Nov	68.0	59.2	62.1	48.0	39.0	79.8	64.7	52.5	35.0
25-Nov	66.0	58.2	59.9	44.5	37.0	74.9	61.3	46.9	30.8
2-Dec	64.0	56.9	57.0	43.0	36.0	66.5	60.4	43.5	28.6
9-Dec	63.0	54.4	56.0	41.2	34.0	64.4	56.8	40.9	26.9
16-Dec	61.0	52.7	53.6	39.3	34.0	57.4	56.1	38.0	24.1
23-Dec	58.0	51.7	52.2	38.3	32.0	53.2	53.4	36.0	23.4
31-Dec	59.0	53.5	51.1	36.8	28.0	56.7	57.0	35.0	22.3

Degree Days, Heating and Cooling
Heating (Base 65° F) & Cooling (Base 50° F)



■ Mean Heating Degree Days Base 65 □ Mean Cooling Degree Days Base 50

	Mean Cooling		Mean Heating	
	Degree Days (°F)		Degree Days (°F)	
	Base 50	Base 65	Base 65	Base 65
JAN	8	0	714	
FEB	11	0	626	
MAR	47	0	522	
APR	210	9	258	
MAY	423	63	82	
JUN	601	185	7	
JUL	840	402	0	
AUG	897	460	0	
SEP	687	268	6	
OCT	420	72	94	
NOV	164	6	312	
DEC	34	0	599	
ANN	4341	1465	3220	



	Average Sensible Cooling Load (Btu/cfm)	Average Sensible Heating Load (Btu/cfm)	Average Latent Cooling Load (Btu/cfm)	Average Latent Heating Load (Btu/cfm)
JAN	0	-20864	0	-3186
FEB	0	-18349	0	-2804
MAR	0	-15847	1	-1570
APR	3	-8860	89	-356
MAY	57	-3623	782	-24
JUN	518	-579	5253	0
JUL	3495	-17	16092	0
AUG	4826	-4	18360	0
SEP	1587	-397	7843	0
OCT	93	-3868	966	-27
NOV	0	-10232	65	-444
DEC	0	-17920	0	-1880
ANN	10579	-100560	49451	-10291

Average Annual Solar Radiation – Nearest Available Site

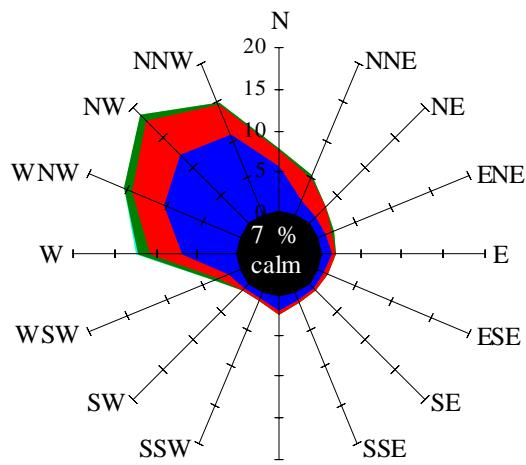
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

Average Annual Solar Heat and Illumination – Nearest Available Site

(Source: National Renewable Energy Laboratory, Golden CO, 1995)

Wind Summary - December, January, and February

Labels of Percent Frequency on North Axis

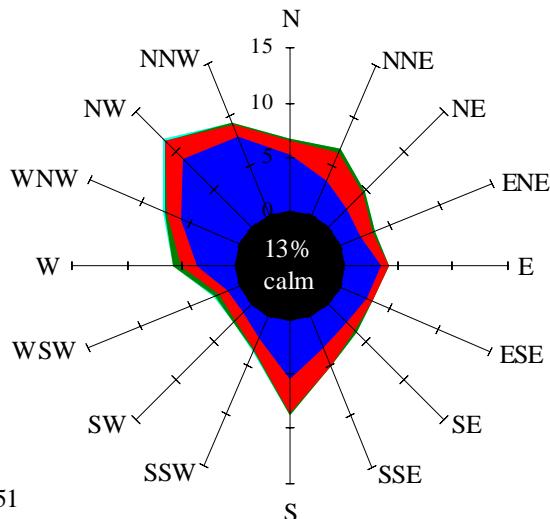


of Observations: 61056

[>34 Knots 25-34 Knots 15-24 Knots 6-14 Knots 1-5 Knots Calm]

Wind Summary - March, April, and May

Labels of Percent Frequency on North Axis

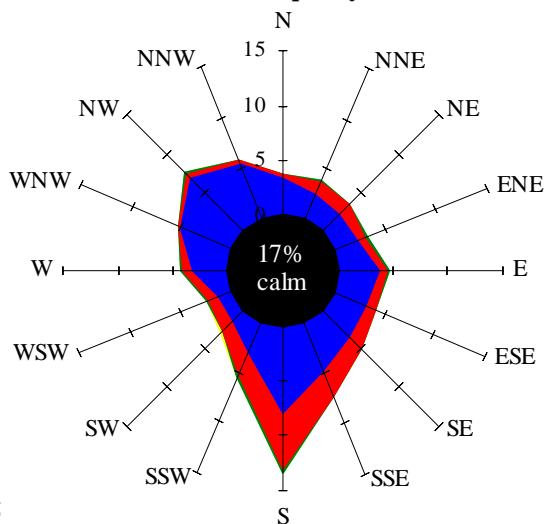


of Observations: 62451

[>34 Knots 25-34 Knots 15-24 Knots 6-14 Knots 1-5 Knots Calm]

Wind Summary - June, July, and August

Labels of Percent Frequency on North Axis

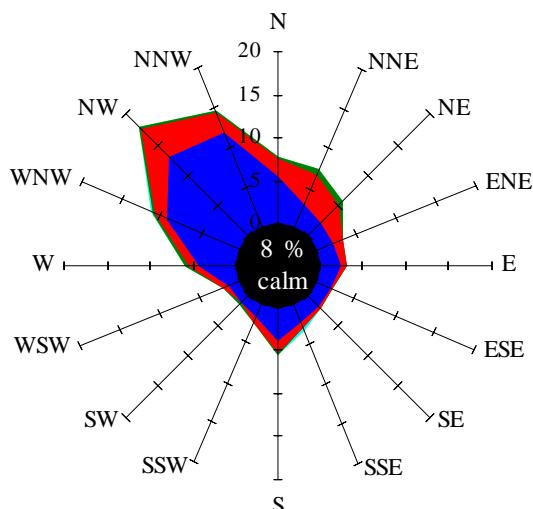


of Observations: 62775

[Yellow Box: >34 Knots | Cyan Box: 25-34 Knots | Green Box: 15-24 Knots | Red Box: 6-14 Knots | Blue Box: 1-5 Knots | Black Box: calm]

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



of Observations: 62234

[Yellow Box: >34 Knots | Cyan Box: 25-34 Knots | Green Box: 15-24 Knots | Red Box: 6-14 Knots | Blue Box: 1-5 Knots | Black Box: calm]